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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/490,605	01/25/2000	Nicholas Gnesda	3-9-4	7379

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CHICAGO, IL 60606-2002

EXAMINER

NGUYEN, LEE

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 07/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/490,605	GNESDA ET AL.
	Examiner	Art Unit
	LEE NGUYEN	2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 22 April 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5,7-15,17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5,7-15,17 and 18 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

1. This action is responsive to the communication filed 4/22/2002.

2. Claims 6 and 16 have been canceled. Claims 1-5, 7-15, 17-18 remain in prosecution.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-3, 5, 7-12, 14-15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe et al. (US 5,095,500) in view of Bruckert (US 5,596,333).

Regarding claim 1-3, 14, 15, Tayloe teaches a cellular communication system that supports a call with mobile station in a sector of a cell (fig. 2); a base station antenna for supporting the call between a mobile unit 100 and the base station 101, 106, 111 (fig. 1), comprising: means for detecting an event associated with the call (col. 4, line 51 through col. 5, line 1); means for determining an approximate location (col. 3, lines 46-50); means for mapping the approximate location to the sector (col. 5, lines 18-24); means for incrementing a corresponding event counter associated with the call even~~t~~ and the sector, the corresponding event counter determining a performance metric associated with the sector (col. 6, lines 45-61); means for accumulating the counter during a study period (col. 6, lines 41-48); and means, responsive to the accumulating means for adjusting a radiation pattern of the base station antenna by coupling control signals to the base station antenna in order to provide an improvement of

the performance metric (col. 5, lines 33-36 and lines 49-52). Tayloe only differs from the claimed invention in that the sector also includes subsectors. Bruckert teaches that the location of the mobile station is determined within subsector of a sector of a cell and uses the antenna structure with narrower beam width than angular width of the sector (col. 3, lines 35-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Bruckert to the system of Tayloe in order to reduce the quality of noise and interference.

Regarding claim 5, Tayloe also teaches bit error rate, handover failures (col. 4, lines 51-65).

Regarding claims 7-12, 17-18, Tayloe also teaches updating and modifying the updating (col. 5, line 68 through col. 6, line 29).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe et al. (US 5,095,500) in view of Bruckert (US 5,596,333) as applied to claim 1 above and further in view of Ablay et al. (US 5,408,683).

Regarding claim 4, Tayloe does not teach the approximate location is a last known location. The technique that approximating the location of a mobile station based on a last known location is conventionally well known.

Ablay teaches using the last known location of the mobile station for calculating the location of the mobile station (col. 8, lines 7-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide location determining of Ablay to the system of Tayloe in order to determine the location of the mobile station when the absolute location of the mobile station is uncertain.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tayloe et al. (US 5,095,500) in view of Bruckert (US 5,596,333) as applied to claim 1 above and further in view of Langston (US 6,112,056).

Regarding claim 13, Tayloe does not teach the conventional antenna array. According to Langston, an antenna array can be implemented in a base station (fig. 1, col. 11, lines 13-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the linear antenna array of Langston to the base station of Tayloe in order to offer advantage over other antenna of being capable of relatively rapidly changing the direction of propagation beam.

Response to Arguments

8. Applicant's arguments filed 4/22/2002 have been fully considered but they are not persuasive.

Applicant argues that Tayloe not only fails to alter radiation patterns of antennas, when he mentioned a characteristic that could be effectively changed by altering radiation pattern of an antenna (i.e., antenna shaping) he states outright that such changes must be made in the field. According to the disclosure of Tayloe, one must dispatch a worker to the site of the antenna to make such adjustments.

In response, the examiner respectfully disagrees. The varying antenna shaping which is performed in the field by a technician in Tayloe does not mean altering radiation pattern of an antenna. In fact, it changes the "shape" of the antenna, rather than the electromagnetic coverage of the area or the radiation pattern of an antenna. It is noted that in col. 5, line 34 Taylor teaches that the system operator can alter the transmitter power such that the electromagnetic coverage of the system can be optimized (col. 5, line 47 and line 51). This can be demonstrated in figures 2-3, col. 6, lines 41-62 in which based upon the capacity of in the rush hour the operator can adjust the coverage area, i.e. or antenna pattern in order to

accomplish different pattern. Therefore, Tayloe does teach varying radiation patterns of the antennas.

Applicant further argues that Bruckert does not teach individually or in combination with Tayloe the altering of a radiation pattern of a base station antenna in a wireless communication system to improve the performance on a subsector basis.

In response, first, Tayloe does teach the altering of radiation pattern of the antenna in the base station as discussed above. Bruckert teaches using the antenna structure with narrow beam width in subsector compared to the angular width of the sector. Therefore, the combination of Tayloe and Bruckert teaches the altering of a radiation pattern of a base station antenna in a wireless communication system in a subsector. Second, Bruckert, alone, does teach the altering of a radiation pattern of a base station antenna in a wireless communication system in a subsector basis (col. 3, lines 39-42 and col. 5, line 62 through col. 6, line 6).

From the above, the examiner believes that the rejection of claims 1-5, 7-15, and 17-18 is proper.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEE NGUYEN whose telephone number is (703)-308-5249. The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on (703) 308-

5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

LEE NGUYEN *lnv 7-2-02*
Primary Examiner
Art Unit 2683